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Subject: Hancock Wind Project Decommissioning Budget - Revised

Dear Jim:

Sewall was requested to develop this revised Decommissioning Budget for the option of 17 Vestas wind turbine generators (WTG) on 116.5 meter towers at the Hancock Wind project located in T16 MD and T22 MD, Hancock County, Maine. The budget represents an opinion of probable cost (OPC), in today's dollars, for decommissioning based on the assumption that the WTGs, towers, and other project components will be disassembled and disposed following completion of use of the wind turbines. The budget is also built on the assumption that the cost of decommissioning will be fully or partially offset by the scrap/salvage value of the towers and turbine components.

Based on information provided from First Wind, we are assuming the O&M Building will be turned over to the land owner and the Substation will be transferred to Bangor Hydro Electric. These components have therefore not been included in the discussion or calculations herein. It is assumed that all project roads will remain.

Information Sources for this Review

This review is based on the civil and electrical site plans and quantity information provided by First Wind, discussions with contractors familiar with this type of construction and our own experience with wind projects. Wage rates used in these estimates are based on the State of Maine Department of Labor, Bureau of Labor Standards; 2014 Fair Minimum Wage Rates, Heavy and Bridge; Hancock County.

Decommissioning Scope

The decommissioning process reflected in this OPC is based on Decommissioning Plans prepared for similar wind projects.

In summary, the decommissioning and restoration process in the Plan consists of the following steps:

- Disassembly and removal of above-ground structures
- Removal of below-ground structures to a depth of 24 inches
- Re-grading and seeding

Above-ground structures include the turbines, transformers, overhead collection lines and meteorological towers. Below-ground structures include turbine and collection system foundations; and drainage control structures (e.g., culverts) as necessary to restore turbine sites. Following removal of all above- and below-ground structures to 24 inches below grade, the individual disturbed areas will be re-graded to be consistent with surrounding areas and reseeded to promote re-vegetation. The cost for disposal for any materials that are not scrapped is considered incidental, unless otherwise noted.

Decommissioning Budget

The decommissioning process has been divided into five (5) general work items. Quantities and unit prices for these individual work items are presented and discussed in detail in the following paragraphs.

1. Project Management (contractor costs, equipment, etc.)
2. Site Work/Civil (site reclamation)
3. Wind Turbine Foundations
4. Wind Turbine Generators and MET Towers
5. Electrical Collection System

1. Project Management

1.1 Mobilization

A. Mobilization and demobilization to setup and breakdown the crane and assist crane estimated to cost a flat fee of $95,000 per one-way trip, for a total of:	$	190,000.00		
B. In addition, it is estimated that the cranes will be re-mobilized an additional seven (7) times at an estimated cost of $60,000 per move to reach all of the turbine sites for a total of:	$	420,000.00		
C. Mobilization and demobilization of ancillary equipment (i.e. bull dozers, backhoes, etc.) is estimated to be:	$	50,000.00		
Total estimate for mobilization is:			$	660,000.00
1.2 Project Oversight. Oversight of the decommissioning is estimated at:			$	110,500.00
1.3 Incidentals. A budget of approximately 5% of the decommissioning scope is recommended for project incidentals:			$	103,000.00
1.4 Contingency. A contingency of approximately 10% of the decommissioning scope is recommended to cover unknowns:			$	206,000.00
Total opinion of probable costs for **Project Management:**			**$**	**1,079,500.00**

2. Site Work/Civil (Site Reclamation)

2.1 Re-grading of turbine sites.

A. The decommissioning plan includes restoring each of the turbine sites. We are assuming that all excavated areas will be brought up to grade and sloped to drain with suitable fill material generated from the re-grading of the turbine site or from off-site sources. The estimated cost includes additional fill, topsoil or other organic matter to support growth, seed, and mulch.

Approximate disturbed area:		12,350	SF/turbine site	
Estimated cost per 1000 SF (1 MSF):	$	330.00	/MSF	
Total estimated re-grading material cost for all 17 turbine sites:			$	69,300.00

B. This re-grading and restoration work is estimated to take a dozer and operator approximately eight (8) hours to complete at each turbine site.

Labor & equipment rate:	$	200.00	/hour

Total re-grading and restoration work for all 17 turbine sites:	$ 27,200.00		
Total estimate for re-grading turbine sites is:		$	96,500.00

2.2 Road Maintenance. Dust control, road maintenance, and post construction road repairs is difficult to estimate. A budget of approximately 1% of the $4.6 million estimated for road construction is recommended to address these items.

	$	46,000.00
The total opinion of probable costs for **Site Work/Civil:**	**$**	**142,500.00**

3. Wind Turbine Foundations

3.1 Removal of WTG foundation to 2 FT below grade. Removal of the turbine foundations is assumed to require a hydraulic excavator equipped with hydraulic ram (hoe-ram), an additional excavator with bucket for loading, and various dozers and loaders.

Total estimated labor & equipment cost:	$ 3,500.00 /site		
Total estimate for WTG foundation removal labor for all 17 turbine sites:		$	59,500.00

3.2 Transportation of rubble and disposal. Concrete demolition rubble generated at each turbine site is estimated to be approximately 35 cubic yards (based on a removal depth of 2 feet below grade; while foundation base has increased, the foundation pedestal at the top remains the same size). As it is assumed the steel rebar will be separated from the concrete debris, the rubble essentially becomes an inert material. Therefore, we have assumed that the concrete rubble generated will not be transported offsite but be used onsite as fill at toes of slopes, for road base or topping material, or at other locations in need of fill as desired by the property owner. Costs to transport the foundation rubble within the project boundaries, in comparison to other decommissioning costs, are assumed to be negligible. In the unlikely event the material cannot be used on-site, the material will be transported for offsite use. Costs to transport the foundation rubble to disposal are based on an estimated requirement of four (4) dump truck trips for each turbine site and transported to a location within 2 hours (one-way) at an equipment and labor rate of $100/hr.

Total estimated labor & equipment cost:	$ 400.00 /dump truck trip		
Total estimate for WTG foundation transportation costs for all 17 turbine sites:		$	27,200.00
The total opinion of probable costs for removal of **WTG Foundations:**		**$**	**86,700.00**

4. Wind Turbine Generators and MET Towers

4.1 Disassembly of turbine generators:

A. Disassembly costs for the WTGs are based on the assumption that it will take a 10-man crew 25 hours to disassemble each tower and turbine, which is roughly equivalent to the labor effort required for tower and turbine assembly.

Estimated labor rate:	$ 25.00 /man-hour		
Total estimate for WTG disassembly for all 17 turbines:		$	106,300.00

B. Based on an assumption that the two cranes (erector and assist cranes) can disassembly two (2) turbines a week, the crane rental is estimated to be nine (9) weeks. Two (2) weeks are added for wind day delays.

Estimated rental costs for two cranes:	$ 40,000.00 /week		
Total estimate for WTG disassembly equipment for all 17 turbines:		$	440,000.00

C. Additionally, once the towers and turbines are on the ground, they will need to be cut up into manageable sized pieces in preparation for transportation to scrap, recycle, or disposal facilities. We are assuming it will take a 5-man crew 25 hours to do this work per turbine.

Estimated labor rate:	$	22.00	/man-hour		
Total estimate for WTG dismantling for all 17 turbines:			$	46,800.00	
The total estimate for WTG disassembly is:					$ 593,100.00

4.2 Transportation of turbine components to disposal/reclamation site. Cost to transport the tower and turbine components to facilities for scrap, recycling or disposal are based on a estimated requirement of 12 transport vehicles per turbine site (note: transport of new turbine and tower components to a site requires 14 to 16 transport vehicles).

Total estimated labor & equipment cost:	$	1,400.00	/transport trip		
Total estimate for turbine component transport for all 17 turbine sites:					$ 285,600.00

4.3 Nacelle housing, blade, and other component disposal. Disposal of the nacelle housing, blades, and other non-scrappable components are based on an estimated 116,300 lbs/turbine. Disposal fees are generally based on weight (in tons).

Total estimated weight of blades and nacelle:		59	tons		
Disposal fee (based on Bangor area landfill rates):	$	142.00	/ton		
Total estimate for nacelle housing and blade disposal for all 17 turbine sites:					$ 142,500.00

4.4 MET Tower disassembly/removal:

A. Disassembly costs for the MET towers are based on the assumption that it will take a 5-man crew 20 hours to disassemble each MET tower.

Estimated labor rate:	$	25.00	/man-hour		
Total estimate for MET disassembly labor cost for two (2) towers:				$ 5,000.00	

B. Additionally, equipment rental is estimated at approximately 20 hours for each MET tower to assist with the disassembly, partially remove foundations, and reclaim the site.

Total estimated labor & equip. rate:	$	200.00	/hour		
Total estimate for MET disassembly equipment cost for two (2) towers:				$ 8,000.00	
Total estimate for MET tower disassembly/removal for two (2) towers is:					$ 13,000.00

4.5 Transportation of MET tower components to disposal/reclamation site.

A. Cost to transport the MET tower components to facilities for scrap, recycling or disposal are based on an estimated requirement of one (1) truck trip for each MET tower.

Total estimated labor & equip. cost:	$	920.00	/trip		
Total estimate for MET component trucking cost for two (2) towers:				$ 1,900.00	

B. We have assumed that the concrete rubble generated from the foundations (while separating rebar as necessary) will not be transported offsite but be used onsite as fill at toes of slopes, for road base or topping material, or at other locations in need of fill as desired by the property owner. In the unlikely event the material cannot be

used on-site, the material will be transported for offsite use. Costs to transport the foundation rubble to disposal are based on eight (8) cubic yards of rubble for an estimated one (1) dump truck trip per MET tower site and transported to a location within 2 hours (one-way) at an equipment and labor rate of $100/hr.

Total estimated labor & equip. cost:	$	400.00	/dump truck trip		
Total estimate for MET foundation transportation cost for two (2) towers:			$	800.00	
Total estimate for MET tower disposal for two (2) towers is:					$ 2,700.00

The total opinion of probable costs for **WTGs and MET Tower removal:**	**$**	**1,036,900.00**

5. Electrical Collection System

Note that as the direct-buried underground collector is buried deeper that 2 ft, it will not be removed but be abandoned in place.

5.1 Disassembly of overhead collector lines and associated components:

A. Disassembly and spooling costs for the overhead collector lines and associated components are based on the assumption that the labor effort required will be a 3-man crew working for four (4) hours per 1,000 feet of overhead wire.

Estimated total length of overhead lines:		8130	feet		
Estimated labor rate:	$	38.00	/man-hour		
Total estimate for overhead collector lines disassembly:			$	4,600.00	

B. Equipment rates are estimated at the following rate for approximately 5 days.

Estimated equipment rates:	$	1,700.00	/day		
Total estimate for overhead collector lines disassembly:			$	8,500.00	

C. Pole removal and filling of remaining hole, based on the following approximate quantities:

Amount of poles:		40	each		
Removal labor and equipment costs:	$	160.00	/pole		
Total estimate for overhead collector pole removal:			$	6,400.00	
Total for disassembly of overhead collector lines:					$ 19,500.00

5.2 Transportation of collector lines and associated components

A. The cost to transport the collector line and associated components to facilities for scrap, recycling or disposal is based on the number of spools required per collector line sizes and lengths for the project, and a capacity of eight (8) spools per truck.

Estimated spools of collector line:		7	each		
Estimated labor & equipment cost:	$	1,400.00	/truck trip		
Total estimate for collector lines disassembly:			$	1,400.00	

B. Pole removal will be transported at a rate of 30 poles per logging truck. It is assumed that poles will be sold or given away.

Amount of poles:			40	each	
Estimated labor & equipment costs:	$	1,100.00	/truck trip		
Total estimate for overhead collector pole removal:			$	2,200.00	
Total for transportation of collector line and associated components:					$ 3,600.00

The total opinion of probable costs for **Electrical Collection System removal:** **$ 23,100.00**

Disassembly & Removal Summary

The total opinion of probable disassembly and removal costs from summing the items above: **$ 2,368,700.00**

Scrap / Salvage Value

For the purposes of this decommissioning plan, we have assumed that transformers would be sold for reuse and all other scrapable metal materials from the project decommissioning would be sold as scrap to a recycling yard in the Bangor, Maine area. The presumed scrap / salvage values are based on the following conservative estimates:

1. **<u>Presumed scrap value of WTGs</u>.** In estimating the scrap value of the WTGs, the following component weight estimates were used (all weights are in pounds). No scrap value was assumed for the blades or nacelle shell.

Bottom section:	179,700	Top section:	100,300
Second section:	169,700		
Third section:	157,600	Nacelle	144,900
Fourth section:	119,000	Rotor	73,500

Total estimated weight for each WTG: 944,700 lbs

Current prices for #1 steel scrap at a Bangor, Maine area metal recycling center:

#1 steel $ 165.00 /ton

[(944,700 lbs / 2,000 lbs per ton) x $165 per ton x 17 turbines = approx. $1,325,000)

Total opinion of presumed scrap value for all 17 WTGs: **$ 1,325,000.00**

2. **<u>Presumed value of the internal transformers</u>.** The cost of an internal transformer is assumed to be 85% of the cost of an equivalent external pad mounted transformer. Based on an estimated cost of $70,000 for external transformers, this equates to about $59,500. Based on our research, typical transformers have a life expectancy of 50 years. Therefore, at 20 years a transformer could have a value of approximately 50% of its original cost. However, to be conservative, we have estimated the value of the internal transformers at 10% of the original transformer cost.:

Estimated original cost for internal transfomers:	$	59,500.00	each
Estimated value (10%):	$	5,950.00	each

Total opinion of presumed value for all 17 external transformers: **$ 101,200.00**

3. **Presumed scrap value of the MET towers.** In estimating the scrap value of the MET towers, the following component weight and steel scrap values were used:

MET tower component weight:		7,000	lbs
Average steel scrap value:	$	165.00	/ton

Total opinion of **presumed scrap value of all two (2) MET towers:** **$ 1,200.00**

4. **Overhead wiring scrap value.** Quantities of overhead wire and wire sizes and lengths are based on electrical drawings prepared by CHA and used as a basis for estimated scrappable metal amounts. Overhead wiring consists of aluminum (steel reinforced) conductors.

Estimated linear feet of wiring:		24,390	ft
Estimated weight of scrappable aluminum:		7,100	lbs
Current price for aluminum scrap at a Bangor area metal recycling center:	$	380.00	/ton

Total opinion of **presumed scrap value of the overhead and underground wiring:** **$ 1,400.00**

Scrap / Salvage Value Summary

The total opinion of probable scrap / salvage value from summing the items above: **$ 1,428,800.00**

Decommissioning Summary

The total opinion of probable disassembly and removal costs is:	$	2,368,700.00
The total opinion of probable scrap / salvage value for the project is:	$	1,428,800.00

The net estimated opinion of probable cost for decommissioning is: $ 939,900.00

Please do not hesitate to contact us with any questions regarding the information contained in this review. We appreciate the opportunity to work with you on this project.

Sincerely,

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